Determining Geothermal Component System and 2D Inverse Modelling of "AS" Geothermal Field With Gravity Method in Garut-West Java

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Abstract

Gravity survey has been carried at "AS" geothermal field, Garut, West Java, Indonesia as many as 300 points of measurement, then do the data processing to obtain maps of Bouguer anomaly, maps of regional anomalies, maps of residual anomaly, and 2D inversion cross sections below the surface.

Based on the gravity exploration methods in the "AS" field, the Bouguer anomaly map with the correction of density is about 2.67 gr/cm^3, shows contour pattern varies with the gravity anomaly high contrast and low range between -20 mgal untill 45 mgal. The Bouguer anomaly map indicate that the reservoar is under the peak Field "AS", reinforced by the emergence of several manifestations are fumaroles right on it.

Based on the results of 2D inversion modelling matlab incision using the data reinforce the picture of the residual anomalous heat source and upflow paths with a low value of density contrast. Average density value of capsrock is about 2.8475 gram/cm^3, the average density value of reservoar is about 2.53 gram/cm^3, and the average value density of compact andesite is about 2.691 gram/cm^3.

Keywords : heat source, manifestation, upflow, capsrock, matlab